

**In the United States Patent and Trademark Office**

In re Application of:

**Perlman**

Serial No.: 10/010,689

Group Art Unit: 1714

Filed: 11/08/2001

Atty Docket 0773442-4701

For: Freestanding plastic container for controlled  
combustion of alcohol-based lighter fluid

Examiner: Toomer, C.

**Affidavit of Airlite Plastics Co**

I, Greg Sosso, do hereby declare, under pains and penalties of perjury, as follows:

1. I am employed by Airlite Plastics, Inc. of Omaha, Nebraska ("Airlite"), in the function of VP Sales and Marketing.
2. I am over the age of 21 years, and am knowledgeable about the matters contained herein.
3. Airlite provided Dr. Daniel Perlman, of Brandeis University, with injection-molded food containers molded from a blend of Amoco 7934 PP and Dow Affinity SM1300. Product Data Sheets attached.

Signed on 11-20-2003

By: Greg Sosso



**In the United States Patent and Trademark Office**

In re Application of:

**Perlman**

Serial No.: 10/010,689

Group Art Unit: 1714

Filed: 11/08/2001

Atty Docket 0773442-4701

For: Freestanding plastic container for controlled  
combustion of alcohol-based lighter fluid

Examiner: Toomer, C.

**Affidavit of Dr. Daniel Perlman - 35 CFR 1.132**

I am the inventor of the above-referenced invention, and I hereby declare, under pains and penalties of perjury, as follows:

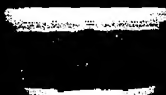
1. In the tests performed and recited in the Specification of said invention I tested containers number 451 and S651 from Airlite Plastics Company (See Enclosed catalog, attached hereto as Exhibit A), fabricated entirely from resin 7934 (BP Amoco) and polyolefin plastomer Affinity SM 1300 (Dow).
2. The advantage of the present invention over cited JP 62-20594 includes the absence of metallic salt residues after burning, such as barium carbonate, which are undesirable environmental contaminants.
3. An additional advantage of the present invention over cited JP 62-20594 includes the substantially lower cost of the use of mass-produced food containers for this application in comparison to containers made from heavily-loaded-inorganic-material-containing resins.

Signed on November 18, 2003

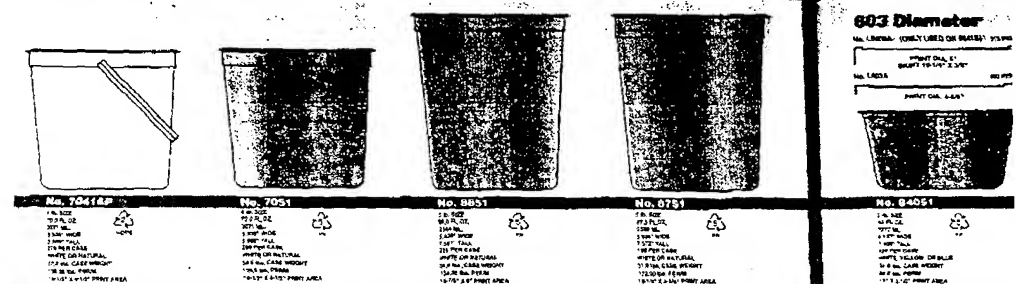
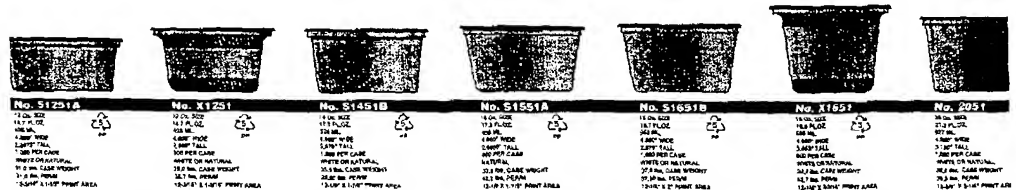
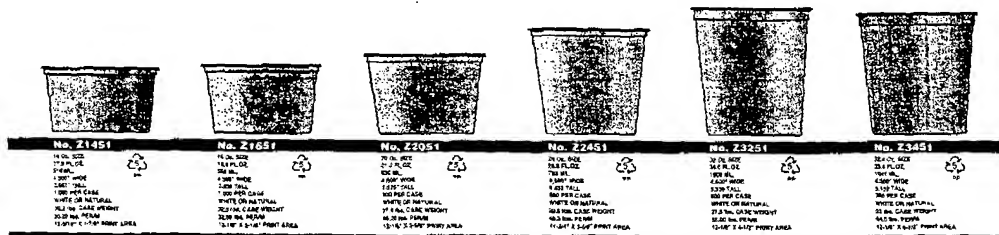
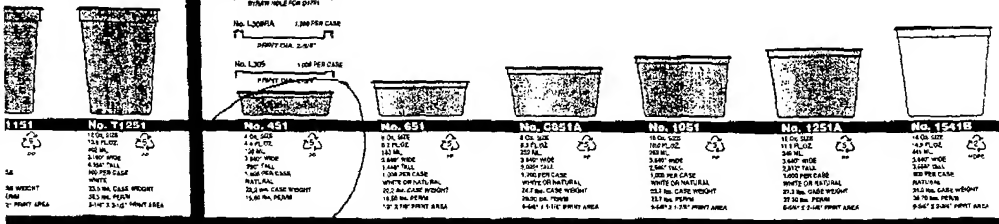
by 






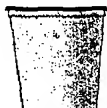
Dr. Daniel Perlman




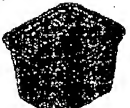

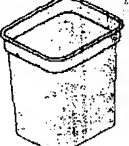
## Exhibit A




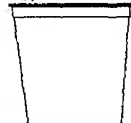


**AIRLITE PLASTICS CO.***"Making Your Success Our Destination"*




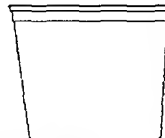



**309 Diameter**

312 Diameter			313 Diameter		
					
<b>No. 18410</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 18415</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 18421</b> 15.00 DIA. 15.00" TALL 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 1051</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 1251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 1751</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA

RECTANGLE LINE					
					
<b>No. 53251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. R851</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. R1251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. R1651</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. R2451</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. R3251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA

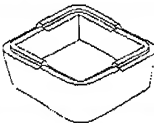
502 Diameter					502 Diameter
					
<b>No. 22051</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2451A</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2451</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 23241</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2251B</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA

502 Diameter					502 Diameter
					
<b>No. 22051</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 23241</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2251B</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	<b>No. 2251</b> 15.00 DIA. 13.50 FL. OZ. 40.00 IN. 1.50" WIDE 17.00" TALL 300 PER CASE WHITE OR NATURAL 32.00 LB. CASE WEIGHT 44.00 LB. PER CASE 15.00" x 15.00" PRINT AREA	

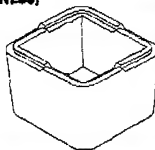


**CS-LINE COMBINATION SERIES (1.5" WALL THICKNESS)****Stock #CS1-180**

13.0" OUTSIDE x 10.0" INSIDE LENGTH  
13.0" OUTSIDE x 10.0" INSIDE WIDTH  
7.0" OUTSIDE x 7.0" INSIDE HEIGHT  
180 PER TRAY PACK

**Stock #CS2-108**

13.0" OUTSIDE x 14.0" INSIDE LENGTH  
13.0" OUTSIDE x 14.0" INSIDE WIDTH  
3.0" OUTSIDE x 3.0" INSIDE HEIGHT  
108 PER TRAY PACK

**Stock #CS3-60**

13.0" OUTSIDE x 15.0" INSIDE LENGTH  
13.0" OUTSIDE x 15.0" INSIDE WIDTH  
3.0" OUTSIDE x 3.0" INSIDE HEIGHT  
60 PER TRAY PACK

These are designed to be nested and matched together to make 5:5 different size containers. Inside and outside height dimensions are per each half.

**S-LINE 1.5" THICK WALL FOAM CHESTS**  
\* EXTENDED LID AVAILABLE TO INCREASE INSIDE HEIGHT.**\* Stock #S4**

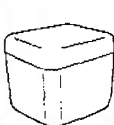
11.0" OUTSIDE x 7.0" INSIDE LENGTH  
8.0" OUTSIDE x 5.0" INSIDE WIDTH  
7.0" OUTSIDE x 4.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**Stock #S5**

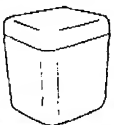
11.0" OUTSIDE x 8.0" INSIDE LENGTH  
10.0" OUTSIDE x 7.0" INSIDE WIDTH  
8.0" OUTSIDE x 5.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**\* Stock #S6**

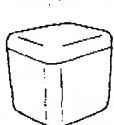
11.0" OUTSIDE x 7.0" INSIDE LENGTH  
8.0" OUTSIDE x 5.0" INSIDE WIDTH  
10.0" OUTSIDE x 7.0" INSIDE HEIGHT  
1 PER BOX  
100 PER TRAY PACK

**Stock #S8**

12.0" OUTSIDE x 10.0" INSIDE LENGTH  
10.0" OUTSIDE x 8.0" INSIDE WIDTH  
10.0" OUTSIDE x 7.0" INSIDE HEIGHT  
1 PER BOX  
70 PER TRAY PACK

**\* Stock #S11**

11.0" OUTSIDE x 11.0" INSIDE LENGTH  
11.0" OUTSIDE x 11.0" INSIDE WIDTH  
11.0" OUTSIDE x 11.0" INSIDE HEIGHT  
1 PER BOX  
80 PER TRAY PACK

**Stock #S13**

12.0" OUTSIDE x 11.0" INSIDE LENGTH  
10.0" OUTSIDE x 8.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
70 PER TRAY PACK

**Stock #S16**

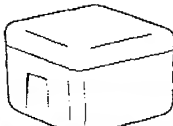
12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
70 PER TRAY PACK

**Stock #S17**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
60 PER TRAY PACK

**\* Stock #S20**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
60 PER TRAY PACK

**EXPANDED POLYSTYRENE****Stock #S21**

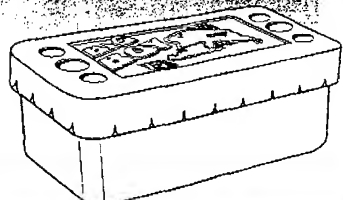
12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
60 PER TRAY PACK

**Stock #S39**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
60 PER TRAY PACK

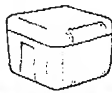
**\* Stock #S62**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER CASE  
60 PER TRAY PACK

**Stock #S96**

16.0" OUTSIDE x 16.0" INSIDE LENGTH  
12.0" OUTSIDE x 12.0" INSIDE WIDTH  
16.0" OUTSIDE x 16.0" INSIDE HEIGHT  
8 PER TRAY PACK

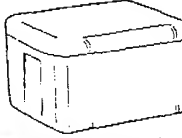
FREEZE CHEST CAN BE PACKED ONE PER COMPARTMENT  
BOX OR IN MULTIPLE CASES 12 PACKS.  
MULTIPLE PACKING CHESTS ARE NOT RECOMMENDED. \* FUTURE  
SOL AVAILABLE 10TH PLAN OR FURNISHED LEADS

**T-LINE 1.5" THICK WALL FOAM CHESTS****Stock #T10**

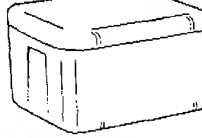
11.0" OUTSIDE x 11.0" INSIDE LENGTH  
10.0" OUTSIDE x 10.0" INSIDE WIDTH  
11.0" OUTSIDE x 11.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**Stock #T20**

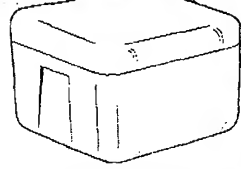
12.0" OUTSIDE x 12.0" INSIDE LENGTH  
11.0" OUTSIDE x 11.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**Stock #T50**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
11.0" OUTSIDE x 11.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**Stock #T100**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
11.0" OUTSIDE x 11.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK

**Stock #T200**

12.0" OUTSIDE x 12.0" INSIDE LENGTH  
11.0" OUTSIDE x 11.0" INSIDE WIDTH  
12.0" OUTSIDE x 12.0" INSIDE HEIGHT  
1 PER BOX  
120 PER TRAY PACK



**In the United States Patent and Trademark Office**

---

In re Application of:

**Perlman**

Serial No.: 10/010,689

Filed: 11/08/2001

Group Art Unit: 1714

Atty Docket 0773442-4701

For: Freestanding plastic container for controlled  
combustion of alcohol-based lighter fluid

Examiner: Toomer, C.

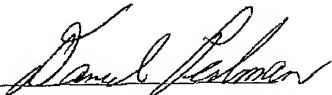
---

**Second Affidavit of Dr. Daniel Perlman - 35 CFR 1.132**

I am the inventor of the above-referenced invention, and I hereby declare, under pains and penalties of perjury, as follows:

1. Exhibit B, attached hereto, is a letter which was received by US Postal Service mail, in response to my inquiry of BP Amoco by telephone and FAX on the subject of the purity and composition of their polypropylene homopolymer.
2. Exhibit D, attached hereto, is a product description which was mailed to me together with Exhibit B. It is also available on the Internet at <http://www.bpchemicals.com/polypropylene/pdf/7934.pdf>.
3. Exhibit E, attached hereto, is a MSDS which was mailed to me via US Postal Service from Dow Chemical Company of Midland MI, in response to my telephone inquiry on the subject of the composition of their Affinity polyolefin product..
4. Exhibit C, attached hereto, is a product description which was obtained from Dow Plastics together with Exhibit E, and is available on the Internet at <http://www.hspc.co.kr/products/affinity/datasheet/SM1300.pdf>.

Signed on December 1, 2003

by   
Dr. Daniel Perlman

bp

## Exhibit B



Product Stewardship  
160 West Warrenville Road, MC 5A  
Naperville, Illinois 60563-8460  
United States

November 24, 2003

Daniel Perlman  
Perlman Consulting  
94 Oakland Av.  
Arlington, MA 02476

*Via Facsimile: 781-736-2478*

RE: Presence of Inorganic Substances - BP Amoco Polypropylene Grade 10-7934

Dear Mr. Perlman:

Thank you for your interest in BP Amoco Polypropylene. Polypropylene Grade 10-7934 is 99+% propylene homopolymer. In response to your question regarding the presence of inorganic materials, please be advised that this resin contains approximately 0.01% inorganic materials.

If you have further questions, please do not hesitate to contact me by telephone at 630-420-5102, by facsimile at 630-420-5375, or by e-mail at Barbara.Marsh@bp.com.

Sincerely,

A handwritten signature in cursive script that reads "Barbara A. Marsh".

Barbara A. Marsh  
Advisor, Product Registration

cc: David W. Harris, BP  
Byron Pinion, BP

Injection Molding Resin

## Exhibit C



Dow Plastics

## AFFINITY\* SM 1300

## Polyolefin Plastomer for Injection Molding

- High clarity, durable injection molded parts
  - Compression molded applications
  - Excellent optics and flexibility
  - Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2c.
- Consult the regulations for complete details.

Slip Additive: 600 ppm

AFFINITY SM 1300 Polyolefin  
Plastomer (POP) for Injection  
Molding is produced via INSITE™  
Technology from Dow Plastics\*.

This is an ethylene alpha-olefin  
resin that offers excellent  
performance in durable injection  
molded industrial and consumer

goods and compression molded  
closure liners or gaskets.

Physical Properties	Test Method	Values <sup>(1)</sup> English (SI)
<b>Resin Properties</b>		
Melt Index, g/10 min	ASTM D 1238	30.0
Density, g/cc	ASTM D 792	0.9020
DSC Melting Point, °F (°C)	Dow Method	208 (98)
Vicat Softening Point, °F (°C)	ASTM D 1525	174 (79)
<b>Molded Part Properties<sup>(2)</sup></b>		
Tensile Yield <sup>(3)</sup> , psi (MPa)	ASTM D 638	598 (5)
Ultimate Tensile <sup>(3)</sup> , psi (MPa)	ASTM D 638	1325 (10)
Ultimate Elongation <sup>(3)</sup> , %	ASTM D 638	824
Notched Izod Impact	ASTM D 256	
@ -50°C, ft-lb/in. (J/m)		1 (68)
@ -20°C, ft-lb/in. (J/m)		9 (487)
@ 0°C, ft-lb/in. (J/m)		5 (252)
@ 23°C, ft-lb/in. (J/m)		4 (212)
Flexural Modulus, psi (MPa)	ASTM D 790	10,280 (71)
Modulus, 2% Secant, psi (MPa)	ASTM D 790	10,280 (71)

## Fabrication Conditions For Injection Molding:

- Molded using DEMAG 150
- Barrel Temperature<sup>(4)</sup>: 374°F (190°C)
- Chill Water Temperature: 55°F (13°C)
- Cycle Time: 20 seconds
- Fill Time: 1 second
- Hold Time: 5 seconds

- (1) Typical values, not to be construed as specifications. Users should confirm results by their own tests.
- (2) Testing performed on injection molded ASTM test specimens (0.126 in.). Properties will vary with changes in molding conditions.
- (3) Critical speed 20 in./min.
- (4) Recommend do not exceed 660°F (288°C) barrel temperature.

\*Trademark of The Dow Chemical Company

-See "Handling Considerations" attached

Dow Plastics, a business group of The Dow Chemical Company and its subsidiaries.

 Superseded 08/01  
 Form No 305-02613-0801X

**polypropylene****Exhibit D****Homopolymer 7934 Resin**

Grade 7934 is a high flow rate, nucleated, antistatic homopolymer. This material is designed for high speed injection molding and meets the requirements of the U.S. Food and Drug Administration as specified in 21 CFR 177.1520.

**Applications**

- Consumer products
- Housewares
- Medical components
- Thin-wall rigid packaging

**Benefits**

- High flow rate
- Fast cycle times
- Good molding performance in thin-walled parts
- Low static charge
- Improved toughness

**Typical Properties\***

Resin	Value	ASTM Method
Melt Flow Rate, 2.16 kg at 230°C, g/10 min	36	D1238
<b>Injection Molded Sample</b>		
Tensile at 23°C		D638
Strength at Yield, psi (MPa)	5,400 (37)	
Elongation at Yield, %	8	
Elongation at Break, %	50	
Flexural Modulus, at 23°C, kpsi (MPa)	225 (1,550)	D790A
Heat Deflection Temperature at 66 psi, (455 kPa), °F (°C)	250 (121)	D648
UL Recognition		
Relative Thermal Index, °C	65	
Flammability Classification	94HB	UL94

\* Typical properties will vary within specification limits.

bp



**Regulatory Information**

The product and uses described herein may require global product registrations and notifications for chemical inventory listings, or for use in food contact or medical devices. For further information, send an e-mail to: [bpcares@bp.com](mailto:bpcares@bp.com).

**Health and Safety Information**

The product described herein may require precautions in handling and use because of toxicity, flammability, or other consideration. The available product health and safety information for this material is contained in the Material Safety Data Sheet (MSDS) that may be obtained by calling +1-866-427-6737 (Toll Free-North America), or by sending an e-mail to: [bpcares@bp.com](mailto:bpcares@bp.com). Before using any material, a customer is advised to consult the MSDS for the product under consideration for use.

The Material Safety Data Sheet for this product contains shipping descriptions and should be consulted, before transportation, as a reference in determining the proper shipping description. If the material shipped by BP is altered or modified, different shipping descriptions may apply and the MSDS of the original material should not be used.

For additional information, samples, pricing and availability, please contact:

**BP Amoco Chemical Company**

Sales Administration and Customer Service  
150 West Warrenville Road  
Naperville, Illinois 60563-8460  
Toll-free: 877/701-2726  
Fax: 630/961-7700  
email: [chem\\_americas@bp.com](mailto:chem_americas@bp.com)

Technical information contained herein is furnished without charge or obligation, and is given and accepted at recipient's sole risk. Because conditions of use may vary and are beyond our control, BP makes no representation about, and is not responsible or liable for the accuracy or reliability of data, nor for toxicological effects or Industrial Hygiene requirements associated with particular uses of any product described herein. Nothing contained in this document shall be considered a recommendation for any use that may infringe patent rights, or an endorsement of any particular material, equipment, service, or other item not supplied by BP. The "Properties" and "Applications" listed in this document are not specifications. They are provided as information only and in no way modify, amend, enlarge, or create any specification or warranty, and ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXCLUDED.

The letters bp and the Helix logo are trademarks of BP p.l.c.  
PP-7934, August, 2001

© 2001 BP Amoco Polymers, Inc.

**Exhibit E****Material Safety Data Sheet**

The Dow Chemical Company  
Midland, Michigan 48674  
Emergency 989-636-4400

**1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

Page: 1

24-Hour Emergency Phone Number: 989-636-4400

Product: AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING

Product Code: 44018

Effective Date: 08/28/02 Date Printed: 11/25/03 MSD: 002101

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Copolymer of ethylene and octene-1 CAS# 026221-73-8 &gt;99%

**3. HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

\*\*\*\*\*  
\* Translucent or white pellets or granules. Odorless. Slipping \*  
\* hazard. \*  
\*\*\*\*\*

**POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)**

**EYE:** Solid or dust may cause irritation or corneal injury due to mechanical action. Vapor may cause eye irritation experienced as mild discomfort and redness.

**SKIN:** Brief contact is essentially non-irritating to skin. Mechanical injury only. Under normal processing conditions, material is heated to elevated temperatures; contact with the material may cause thermal burns. No adverse effects anticipated by skin absorption.

**INGESTION:** Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. May cause choking if swallowed.

(Continued on page 2)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY



Printed on Recycled and Recyclable Paper

**M A T E R I A L   S A F E T Y   D A T A   S H E E T****PAGE: 2**

**Product:** AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING  
**Product Code:** 44018

**Effective Date:** 08/28/02      **Date Printed:** 11/25/03      **MSD:** 002101

---

**INHALATION:** No adverse effects are anticipated from single exposure to dust. Vapors/fumes released during thermal processing may cause respiratory irritation.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

**CANCER INFORMATION:** No relevant information found.

**TERATOLOGY (BIRTH DEFECTS):** No relevant information found.

**REPRODUCTIVE EFFECTS:** No relevant information found.

**4. FIRST AID**

**EYE:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**SKIN:** If molten material comes in contact with the skin, do not apply ice but cool under ice water or running stream of water. DO NOT attempt to remove the material from skin. Removal could result in severe tissue damage. Seek medical attention immediately.

**INGESTION:** If swallowed, seek medical attention. May cause gastrointestinal blockage. Do not give laxatives. Do not induce vomiting unless directed to do so by medical personnel.

**INHALATION:** Move person to fresh air; if effects occur, consult a physician.

**NOTE TO PHYSICIAN:** If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**5. FIRE FIGHTING MEASURES****FLAMMABLE PROPERTIES**

(Continued on page 3)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY



## M A T E R I A L   S A F E T Y   D A T A   S H E E T

PAGE 3

Product AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING

Product Code: 44018

Effective Date: 08/28/02

Date Printed: 11/25/03

MSD: 002101

FLASH POINT: Not applicable  
METHOD USED: Not applicable  
AUTOIGNITION TEMPERATURE: Not applicable

## FLAMMABILITY LIMITS

LFL: Not applicable  
UFL: Not applicable

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: carbon monoxide, carbon dioxide.

OTHER FLAMMABILITY INFORMATION: Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, do not permit dust to accumulate. Dense smoke is emitted when burned without sufficient oxygen.

EXTINGUISHING MEDIA: Water fog or fine spray, dry chemical fire extinguishers, carbon dioxide fire extinguishers and foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. If material is molten, do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)**

(Continued on page 4)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

**M A T E R I A L   S A F E T Y   D A T A   S H E E T****PAGE: 4****Product: AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING**  
**Product Code: 44018****Effective Date: 08/28/02****Date Printed: 11/25/03****MSD: 002101**  
-----

**PROTECT PEOPLE:** Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**PROTECT THE ENVIRONMENT:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**CLEANUP:** Sweep up. Contain spilled material if possible. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations for additional information.

**7. HANDLING AND STORAGE**

**HANDLING:** Avoid breathing process fumes. Electrically ground all equipment. When appropriate, unique handling information for containers can be found on the product label.

**STORAGE:** Store in accordance with good manufacturing practices.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**ENGINEERING CONTROLS:** Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

**PERSONAL PROTECTIVE EQUIPMENT**

**EYE/FACE PROTECTION:** Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

**SKIN PROTECTION:** No precautions other than clean body-covering clothing should be needed. Use gloves with insulation for thermal protection, when needed.

**RESPIRATORY PROTECTION:** Use an approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present.

(Continued on page 5)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

**M A T E R I A L   S A F E T Y   D A T A   S H E E T****PAGE 5****Product AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING**  
**Product Code: 44018****Effective Date: 08/28/02****Date Printed: 11/25/03****MSD: 002101**  
-----**EXPOSURE GUIDELINE(S):** None established.**9. PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE/PHYSICAL STATE:** Translucent white, pellets or granules  
**ODOR:** Odorless  
**VAPOR PRESSURE:** Not applicable  
**VAPOR DENSITY:** Not applicable  
**BOILING POINT:** Not applicable  
**SOLUBILITY IN WATER/MISCIBILITY:** Nil  
**SPECIFIC GRAVITY OR DENSITY:** 0.84 - 0.97

**10. STABILITY AND REACTIVITY****CHEMICAL STABILITY:** Stable.**CONDITIONS TO AVOID:** Exposure to elevated temperatures can cause product to decompose.**INCOMPATIBILITY WITH OTHER MATERIALS:** None known.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. At temperatures exceeding melt temperatures, polymer fragments can be released. Fumes can be irritating. Decomposition products can include and are not limited to: carbon monoxide, carbon dioxide, aldehydes, alcohols, organic acids. Decomposition products can include trace amounts of hydrocarbons.

**HAZARDOUS POLYMERIZATION:** Will not occur.**11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)****SKIN:** The dermal LD50 has not been determined.**INGESTION:** Single dose oral LD50 has not been determined.**MUTAGENICITY:** No relevant information found.**12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)**

(Continued on page 6)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

## MATERIAL SAFETY DATA SHEET

PAGE: 6

Product AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING

Product Code: 44018

Effective Date: 08/28/02

Date Printed: 11/25/03

MSD: 002101

## ENVIRONMENTAL FATE

**MOVEMENT & PARTITIONING:** No bioconcentration is expected because of the relatively high molecular weight (MW >1000). In the terrestrial environment, material is expected to remain in the soil. In the aquatic environment, material is expected to float.

**DEGRADATION & PERSISTENCE:** This water insoluble polymeric solid is expected to be inert in the environment. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

**ECOTOXICITY:** Not expected to be acutely toxic, but pellets may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

## 13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

**DISPOSAL:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device, and landfill.

For additional information, refer to Stability & Reactivity Information, MSDS Section 10.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or

(Continued on page 7)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

**M A T E R I A L   S A F E T Y   D A T A   S H E E T****PAGE: 7****Product: AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING**  
**Product Code: 44018****Effective Date: 08/28/02      Date Printed: 11/25/03      MSD: 002101**  
-----

manage chemicals or plastics, and that manage used drums.  
Telephone Dow's Customer Information Center at  
800-258-2436 or 989-832-1556 for further details.

**14. TRANSPORT INFORMATION**

DEPARTMENT OF TRANSPORTATION (D.O.T.): This product is not  
regulated by D.O.T. when shipped domestically by land.

CANADIAN TDG INFORMATION: This product is not regulated by TDG  
when shipped domestically by land.

**15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected  
regulations represented)**

NOTICE: The information herein is presented in good faith and  
believed to be accurate as of the effective date shown above. However,  
no warranty, express or implied is given. Regulatory requirements  
are subject to change and may differ from one location to another;  
it is the buyer's responsibility to ensure that its activities comply  
with federal, state or provincial, and local laws. The following  
specific information is made for the purpose of complying with  
numerous federal, state or provincial, and local laws and regulations.  
See other sections for health and safety information.

**U.S. REGULATIONS**  
=====

SARA 313 INFORMATION: To the best of our knowledge, this product  
contains no chemical subject to SARA Title III Section 313 supplier  
notification requirements.

-----

SARA HAZARD CATEGORY: This product has been reviewed according to the  
EPA "Hazard Categories" promulgated under Sections 311 and 312 of the  
Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and  
is considered, under applicable definitions, to meet the following  
categories:

(Continued on page 8)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

**M A T E R I A L   S A F E T Y   D A T A   S H E E T**

**PAGE: 8**

**Product: AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDIN**  
**Product Code: 44018**

**Effective Date: 08/28/02      Date Printed: 11/25/03      MSD: 002101**

**REGULATORY INFORMATION (CONTINUED)**

Not to have met any hazard category

**TOXIC SUBSTANCES CONTROL ACT (TSCA):**

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

**STATE RIGHT-TO-KNOW:** This product is not known to contain any substances subject to the disclosure requirements of

New Jersey  
Pennsylvania

**OSHA HAZARD COMMUNICATION STANDARD:**

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**CANADIAN REGULATIONS**

**WHMIS INFORMATION:** The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

This product is not a "Controlled Product" under WHMIS.

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):**

All substances in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

**16. OTHER INFORMATION**

(Continued on page 9)

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY

**M A T E R I A L   S A F E T Y   D A T A   S H E E T**

**PAGE: 9**

**Product: AFFINITY\* SM 1300 POLYOLEFIN PLASTOMER FOR INJECTION MOLDING**  
**Product Code: 44018**

**Effective Date: 08/28/02      Date Printed: 11/25/03      MSD: 002101**

-----

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:**

Health	0
Flammability	1
Reactivity	0

**MSDS STATUS: Revised Section 6.**

\* OR (R) INDICATES A TRADEMARK OF THE DOW CHEMICAL COMPANY  
The Information Herein Is Given In Good Faith, But No Warranty,  
Express Or Implied, Is Made. Consult The Dow Chemical Company  
For Further Information.